

BIOLOGY 1620: Principles of Biology II

Spring Semester 2015

Instructor: Dr. Karen L. Bauer

Office: Science 103

Office Hours: 8:00 – 8:50 am Thursday; 9:00 – 9:50 am F; 10:00 – 10:50 am MW;
2:00 – 2:50 pm Tuesday (or by appointment)

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Lecture: MTWF 1:00 -- 1:50 pm Science 113 (Section 02, CRN 25244) 4 credits
(See Syllabus for topical coverage)

Lab: Labs are graded separately and count 1 credit. You should still register for a lab along with the lecture however. You will receive a separate detailed lab syllabus including the grading policy specific to it when you attend your first lab session. **Labs begin this week.**

About This Course: Required of all Biology majors, including pre-health science, pre-veterinary, pre-medical, pre-dental, and other pre-professional students. Continues BIOL 1610; emphasizes evolution, diversity processes, animal structure and function, plant structure and function. Prerequisite to many other Biology courses. Prerequisite: BIOL 1610. Corequisite: BIOL 1625.

General Education Objectives: These objectives are common to all life science courses at Dixie State University. After successful completion of this course, the student will through testing, written or oral reports **fulfill the bolded outcomes:**

- Goal 1: Demonstrate breadth of discipline-specific knowledge
 - o Outcome 1: Students will describe and explain fundamental topics in five principal perspectives of biology:
 - 1. The chemical and molecular machinations operating within all biological processes**
 - 2. The centrality of genetic systems' governance of life's actions from the cellular to the phyletic**
 3. The coordinated regulation of integrated cellular systems and their effect on the physiological functioning of organisms
 - 4. The dynamic interaction of living systems with each other and their environments**
 - 5. The transforming role of evolution in changing life forms and how evolution explains both the unity and diversity of life**
- Goal 2: Demonstrate the capacity to think independently and critically
 - o Outcome 2: **Students will employ scientific methods to acquire, analyze and apply knowledge of biological phenomena.** (more so in lab rather than lecture)
 - o Outcome 3: **Students will evaluate scientific ideas and information while maintaining receptivity to potential alternative predications.**
- Goal 3: Effectively convey scientific literacy through various mediums of communication
 - o Outcome 4: Reading Comprehension: Students will analyze and critique scientific literature: identifying hypotheses, critiquing methods, interpreting data and results,

- and articulating the context of discussions.
- o Outcome 5: Written Communication: Students will produce well-written reports and/or research papers covering topics in biology. These papers will be presented in the accepted formats of scientific research articles.
 - o Outcome 6: Oral Presentation: Students will publicly present scientific information covering specific topics in the biological sciences. Presentations will adequately communicate data and information in a clear and logical format.
 - 1. explain and apply major concepts of a view of life, the cell, and the genetic basis of life,**
 - 2. demonstrate knowledge of the process of science including asking testable questions, using inductive and deductive reasoning in forming hypotheses and in making reliable predictions,**
 - 3. explain the objective of science and research including distinguishing among the natural sciences, liberal arts (humanities and fine arts), social and behavioral sciences and pseudo-science,**
 - 4. compute ratios, proportions, percentages, decimals, fractions, frequencies and elementary probabilities.**

Specific Course Objectives: Upon successful completion of the assignments, laboratory, exams, and quizzes in this course, the student will:

- describe the structure of a virus and viral multiplication cycles.
- describe the structure of bacteria and their methods of reproduction.
- distinguish among the diversity of protists with respect to their morphology and life-styles.
- describe the structural and reproductive characteristics of organisms in the Kingdom Fungi.
- identify various plant structures and their functions.
- distinguish between monocots and dicots.
- distinguish between gymnosperms and angiosperms.
- describe the optimal conditions for plant nutrition, transport, and growth.
- describe the reproductive cycles of plants.
- describe the five features of body plans in animals: body symmetry, cephalization, gut type, body cavity, and segmentation.
- identify different types of sponges, the cell types each possesses, and their reproductive cycles.
- identify different types of cnidarians, the cell types each possesses, and their reproductive cycles.
- distinguish among the various flatworms and their life cycles.
- identify the characteristics of the ribbon worms.
- describe the physical characteristics of the roundworms.
- identify diseases caused by flatworms and roundworms.
- describe the physical characteristics and habitat of the rotifers.
- distinguish between protostome and deuterostome lines.
- describe the physical characteristics and reproductive cycles of the various types of mollusks.
- identify the physical characteristics of the annelids.
- identify adaptations of the arthropods which contribute to their great success as a group.
- describe the characteristics of specific arthropods.
- describe the characteristics and reproductive cycles of the echinoderms.
- describe the characteristics of the chordates.
- distinguish among the characteristics of fishes, amphibians, reptiles, birds, and mammals.
- describe the structure and function of the vertebrate tissues and organ systems.

- build a strong basic foundation of biological principles in order to support more advanced concepts.

Required Textbook: *Campbell Biology*, Tenth Edition. Jane B. Reece, et al. Pearson Publishing. 2014. ISBN 9780321775658 (Cost: New - \$242.00, Used - \$186.50, New rental - \$130.75, Used rental - \$100.75, eBook version - \$99.00)

Other Required Class Materials: The following items will be provided by you:

- Eleven (11) SCANTRON test forms [the bluish-green Form No. 882-ES].
- No. 2 pencils with good erasers for recording examination answers.
- Notebook or other suitable paper for class notes. A three-ring loose-leaf binder is recommended because it will hold the lab manual, class notes, and various handouts.

NOTE: A 10% penalty will be assessed if you fill out a quiz or assignment with red/pink pen or red/pink pencil. Use #2 pencil or blue/black ink please.

Lecture/Discussion Schedule: The lecture/discussion is scheduled four days each week as noted.

Section 02 (CRN 25244) 1:00 – 1:50 pm MTWF BAUER K

Other Important Dates to Remember: Please make note of the following dates important to your success this semester. You will see such items as the last date for a full refund, the last date to drop or audit, the last date for complete withdrawal from school, etc.

REGULAR SEMESTER DATES WORTH NOTING

Jan. 12	Classwork starts
Jan. 16	Last day to add without signature
Jan. 19	Martin Luther King Jr. Day -- No School
Jan. 22	Drop/Audit fee begins (\$10 per class)
Jan. 27	\$50 Late registration/payment fee
Feb. 2	Pell Grant Census
Feb. 2	Last day for refund
Feb. 2	Last day to drop without receiving a "W" grade
Feb. 2	Graduation Application Deadline for Spring 2015 associate degrees
Feb. 4	Courses dropped for non-payment
Feb. 6	Last day to ADD/AUDIT classes
Feb. 16	President's Day Holiday
Mar. 2	Graduation Application Deadline for Summer 2015 baccalaureate degrees
Mar. 2	Mid-term grades due
Mar. 6	Last day to DROP individual class
Mar. 9-13	Spring Break
Apr. 1	Graduation Deadline for Fall 2015 baccalaureate degrees
Apr. 10	Last day for complete withdrawal
Apr. 13	Fall Registration open to Seniors (90+ credits)
Apr. 14	Fall Registration open to Juniors (60+ credits)
Apr. 15	Fall Registration open to Sophomores (30+ credits)
Apr. 16	Fall Registration open to all students
Apr. 29	Classwork ends
Apr. 30	Reading Day
May 1, 4-7	Final Exams
May 8	Commencement

Attendance: Following is the Dixie State University “Attendance Policy” –

“Regular and prompt attendance in classes and laboratory sessions is expected of every Dixie State University student. Attendance requirements are established by each instructor and such requirements are enforced by the University. No absence excuses a student from completing work missed. It is the student’s responsibility to find out which assignments will be missed.”

“Students receiving scholarship assistance other than federal aid are being sponsored by the citizens of the state of Utah or private donors. As recipients, these students are expected to exert a full effort in their academic studies. As a condition of accepting these funds, and for the privilege of representing Dixie State University in co-curricular activities, these students should plan on regular attendance in classes and laboratories for which they are registered. Attendance will be monitored and those students not attending on a regular basis are subject to termination of their scholarship and/or suspension from participation in activities.”

Attendance is essential. If you do not attend class regularly, you hurt yourself because not only will you fall behind, you will also miss out on valuable information that cannot be easily gleaned from a classmate’s notes. Please be here to get the information firsthand.

A Word About Cellular Phones, Picture Phones, iPods, MP3s, and Text Messaging: The use of electronic communications devices is strictly forbidden during class lectures and exams! All cellular phones must be turned off during class. Too many students in the past have answered their phones and carried on a conversation or otherwise used a communication device to text message, surf the Web and such while I am trying to lecture. Not only is this behavior extremely rude to me, but it is also rude to others who are trying to pay attention and learn. I will not tolerate cellular phones ringing during class. Be advised that if yours rings, a minimum of 15 points will be deducted from your grade. If you disrupt class by leaving to respond to a phone call or you use your text messaging function, you will also receive a point reduction. If you leave class to respond to a cellular phone call, do not return to class and cause further disruption. If your phone calls and text messages are more important than this class, then drop the class.

Please Do Not Bring Your Young Children To Class. Too often children cause disruption during class because they are fidgety, get bored, and have short attention spans. It is against university policy to bring children to class. Please try to find other arrangements.

Examinations: Ten examinations (100 points each) will be given in the testing center during the course (the lowest two scores of which will be dropped), PLUS a **comprehensive** final exam worth 200 points. Exams will cover material studied from the beginning of the course or the previous exam. You should study both the text and your lecture notes. Early exams will NOT be given, and late exams [given only in an emergency] will have a 10% penalty assessed. Any late exam may be different and more difficult than the one taken at the regularly scheduled time. Inform the instructor whenever illness (you may be asked to provide a doctor’s signed note) or emergency occurs, especially if an exam is scheduled – BEFORE the scheduled exam date, if possible. Routine make-up exams will NOT be given in this course.

Quizzes in Lecture/Discussion Classes: Several quizzes worth a total of 150 points will be given throughout the semester. The exact format and time frame will be at the discretion of the instructor. The point values of these quizzes will average 15 points each. The function of these exercises is to encourage you to keep up with your reading and studying. The dates for quizzes will usually be announced in class, but I reserve the right to administer unannounced quizzes or in-class assignments. Questions will be varied but may include short-answer, fill-in-the-blank, true-false, multiple choice, problems, etc.

Late assignments will have a 10% penalty assessed for EACH day that the assignment is late. You will NOT be allowed to make up a quiz for any reason unless you notify the instructor in advance of your absence or illness. You may leave a phone message or e-mail (bauer_k@dixie.edu) if you are unable to take the quiz at the scheduled time. This still does not guarantee that you will be allowed to take the quiz. Any quiz taken late will have a 10% penalty assessed.

One final note: Make certain that you do your own work. Please do not copy the work of others. Besides not helping you, this practice is illegal – it is called plagiarism. Students who copy assignments, whether suspected or apparent, or who permit another or others to copy, will receive NO credit for the assignment.

Grading Policy: Grading for this course will be determined on the basis of points accumulated from your eight highest exams plus the final exam. A total of 1150 points can be earned as outlined above (see “Examinations”). Points earned in the course will be translated into a letter grade as follows:

Examinations (best eight worth 100 points each)	800 points
Quizzes and/or Assignments	150 points
Final examination	200 points

You may expect the following grade according to your total points earned:

A = 93.6 - 100% (1077 - 1150 points)	C = 73.6 - 76.9% (847 - 884 points)
A- = 90.0 - 93.5% (1035 - 1076 points)	C- = 70.0 - 73.5% (805 - 846 points)
B+ = 87.0 - 89.9% (1000 - 1034 points)	D+ = 67.0 - 69.9% (770 - 804 points)
B = 83.6 - 86.9% (962 - 999 points)	D = 63.6 - 66.9% (732 - 769 points)
B- = 80.0 - 83.5% (920 - 961 points)	D- = 60.0 - 63.5% (690 - 731 points)
C+ = 77.0 - 79.9% (885 - 919 points)	F = < 60% (689 points and below)

Grades will NOT be based on the curve. If everyone earns an “A,” everyone gets an “A.” The percentages or total points as outlined above may be decreased but will NOT be increased.

Extra Credit: The only extra credit available in this course is as follows:

100 points (10 points per exam, 20 points on the final exam) built right into the exam itself (i.e. You can earn up to 110 points per exam or 220 on the final.) This is more fair than giving a subjective assignment and everyone has an equal opportunity this way. After all, you have to study for the exams anyway. Do not come to me toward the end of the semester and ask if there is anything you can do to get extra credit (writing a report and such). The answer is NO. Spend your time wisely studying the assigned material.

Academic Integrity or Dishonesty (Cheating and Plagiarism): The instructor will not tolerate any act of cheating which she observes. If any student is observed cheating on any examination or assignment, the instructor will note the time and event and the student will receive no credit for that assignment. Such act of cheating will include the use of books or notes unless these are expressly permitted by the instructor, looking upon another student's paper during the time an examination is in progress, consulting others inside or outside of class using text messaging functions, etc. If a second offense is committed by a student, he/she will be subject to further disciplinary action (See "Code of Conduct," Dixie State University Catalog or Student Handbook).

D Mail Statement: You are required to frequently check your dmail account. Important class and college information will be sent to your dmail account, including DSU bills, financial aid/scholarship notices, notices of cancelled classes, reminders of important dates and deadlines, and other information critical to your success at DSU and in your courses. If you don't know how to access your dmail account, go to www.dixie.edu and select "Dmail" from the left column. To locate your dmail username and password, go to www.dixie.edu, and click on "Log in to student services."

Students with Disabilities: If you are a student with a medical, psychological or a learning difference and requesting reasonable academic accommodations due to this disability, you must provide an official request of accommodation to your professor(s) from the Disability Resource Center **within the first two weeks** of the beginning of classes. Students are to contact the center on the main campus to follow through with, and receive assistance in the documentation process to determine the appropriate accommodations related to their disability. You may call **(435) 652-7516** for an appointment and further information regarding the Americans with Disabilities Act (ADA) of 1990 per Section 504 of the Rehabilitation Act of 1973.

Important Links:

- Disability Resource Center** - dixie.edu/drcenter
- IT Student Help Desk** - dixie.edu/helpdesk
- Library** - library.dixie.edu
- Testing Center** - dixie.edu/testing
- Tutoring Center** - dixie.edu/tutoring
- Writing Center** - dixie.edu/english/dsc_writing_center.php

LECTURE SCHEDULE and READING ASSIGNMENTS
BIOL 1620: Principles of Biology II
Spring Semester, 2015

	Date	Chapter (Reading Assignments in parentheses)
Jan.	12 Mon	Syllabus. Introduction to the course.
	13 Tues	19 Viruses (pp. 392-407)
	14 Wed	19 (continued)
	16 Fri	19 (concluded)
	19 Mon	Martin Luther King Jr. Day -- No School
	20 Tues	27 Bacteria and Archaea (pp. 567-586)
	21 Wed	27 (continued) (Drop Fee begins \$10 / class on Jan. 22)
	23 Fri	27 (concluded) EXAM 1 – Chapters 19, 27 (Jan. 23 – 26)

	Date		Chapter (Reading Assignments in parentheses)
Jan.	26 Mon	28	Protists (pp. 587-611)
	27 Tues	28	(continued)
	28 Wed	28	(concluded)
	30 Fri	31	Fungi (pp. 648-666)
Feb.	2 Mon	31	(continued)
	3 Tues	31	(continued)
	4 Wed	31	(concluded) EXAM 2 – Chapters 28, 31 (Feb. 5 -- 8)
	6 Fri	29	Plant Diversity I: How Plants Colonized the Land (pp. 612-629) (Last day to audit)
	9 Mon	29	(continued)
	10 Tues	29	(concluded)
	11 Wed	30	Plant Diversity II: The Evolution of Seed Plants (pp. 630-647)
	13 Fri	30	(continued)
	16 Mon		President's Day – No School
	17 Tues	30	(concluded) EXAM 3 – Chapters 29, 30 (Feb. 17 – 20)
	18 Wed	32	An Overview of Animal Diversity (pp. 667-679)
	20 Fri	32	(concluded)
	23 Mon	33	An Introduction to Invertebrates (pp. 680-711)
	24 Tues	33	(continued)
	25 Wed	33	(continued)
	27 Fri	33	(concluded) EXAM 4 – Chapters 32, 33 (Feb. 27 – Mar. 2)
Mar.	2 Mon	34	The Origin and Evolution of Vertebrates (pp. 712-750)
	3 Tues	34	(continued) (Midterm Grades Due on Feb. 24)
	4 Wed	34	(continued)
	6 Fri	34	(concluded) EXAM 5 - Chapter 34 (Mar. 16 – 18)
Mar. 9 – 13		SPRING BREAK -- No School	
	16 Mon	35	Plant Structure, Growth, and Development (pp. 752-777)
	17 Tues	35	(continued)
	18 Wed	35	(concluded)
	20 Fri	36	Resource Acquisition and Transport in Vascular Plants (pp. 778-798)
	23 Mon	36	(concluded) EXAM 6 – Chapters 35, 36 (Mar. 23 – 26)
	24 Tues	37	Soil and Plant Nutrition (pp. 799-814)
	25 Wed	37	(concluded)
	27 Fri	38	Angiosperm Reproduction and Biotechnology (pp. 815-835)
	30 Mon	38	(concluded)
Apr.	31 Tues	39	Plant Responses to Internal and External Signals (pp. 836-865)
	1 Wed	39	(continued)
	3 Fri	39	(concluded) EXAM 7 – Chapters 37, 38, 39 (Apr. 3 -- 6)
	6 Mon	40	Basic Principles of Animal Form and Function (pp. 867-891)
	7 Tues	40	(continued)
	8 Wed	40	(concluded) EXAM 8 - Chapter 40 (Apr. 10 – 13)
	10 Fri	41	Animal Nutrition (pp. 892-914) (Deadline Complete Withdrawal)

	Date		Chapter (Reading Assignments in parentheses)	
Apr.	13	Mon	41	(continued)
	14	Tues	41	(concluded)
	15	Wed	42	Circulation and Gas Exchange (pp. 915-945)
	17	Fri	42	(continued)
	20	Mon	42	(concluded) EXAM 9 – Chapters 41, 42 (Apr. 20 – 22)
	21	Tues	44	Osmoregulation and Excretion (pp. 971-992)
	22	Wed	44	(continued)
	24	Fri	44	(concluded)
	27	Mon	50	Sensory and Motor Mechanisms (pp. 1101-1132)
	28	Tues	50	(concluded)
	29	Wed		EXAM 10 - Chapters 44, 50 (in class)
	30	Thurs		Reading Day
May 1	Friday			FINAL EXAM - 12:00 – 2:00 pm in SCI 113 (Sec 02)

Comprehensive (200 points) covering Chapters 19, 27 – 42, 44, 50.

Note: It is intended that the topics will be discussed on the dates indicated. However, some topics may overlap the dates according to time and circumstances. Adjustments to this syllabus will be discussed with and approved by the class.

Disclaimer: The instructor has no intention of discussing all textbook information in class – there is insufficient time. Nevertheless, you are held accountable for the information, whether discussed or not discussed, unless otherwise announced. Prepare your assignments accordingly.
